VIA FACSIMILE TRANSMISSION 571-273-8300

PATENT
17714 (AT 20958-1007)

Remarks

Claims 1, 4-6, 8-14, 17-18 and 29-36 remain pending in the present application. It is respectfully submitted that the pending claims define allowable subject matter.

Claims 1, 4-6, 8-14, 17-18 and 29-36 have been rejected under 35 USC 103(a) as being unpatentable over Chen (PG Publ. 2003/0115749). Applicants respectfully traverse this rejection for reasons set forth hereafter. Initially, it is noted that Chen qualifies as prior art only under 35 USC 102(e) and has a filing date of December 21, 2001, which is less than two months before the filing date of the present application. Applicants reserve the right to antedate Chen at a later time given that the claimed invention of the present application was invented prior to December 21, 2001. Notwithstanding, it is not believed necessary at this time to antedate Chen given the clear differences between the present claims and Chen's teachings.

It is respectfully submitted that Chen fails to teachers suggest the claimed methods. In the outstanding Office Action, it is acknowledged that Chen does not disclose any examples of differential heat treatment between different portions of each individual contact as required by the claims. The Office Action goes on to maintain that the disclosure of Chen, such as in paragraphs 28 and 32, purportedly described differential heat treatment and, as such Chen creates a prima facie case of obviousness. The undersigned respectfully disagrees. It is well settled law that to establish a prima facie case of obviousness, a rejection must set forth the deficiencies of the primary reference and provide a basis within the prior art that would motivate the person of ordinary skill to modify the primary reference in a manner that would render obvious the claimed invention. The outstanding Office Action has not met this burden and as such fails to establish a prima facie case of obviousness.

Independent claims 1, 5, 30, and 31 recite methods requiring, among other things, induction heating of electrical contacts to heat different first and second portions of each electrical contact by different first and second amounts. Claim 13 recites a method requiring induction heating of each contact by different first and second amounts and orienting the contacts such that a contact plane of each contact is parallel to a direction of magnetic fields created

during the induction heating step. Claim 34 recites a method requiring induction heating of each contact by different first and second amounts where the induction heating heats a first portion of each of the electrical contacts such that the first portion exhibits superior strength properties as compared to a second portion of each of the electrical contacts. Claim 35 recites a method requiring induction heating of each contact by different first and second amounts where the induction heating heats a second portion of each of the electrical contacts such that the second portion exhibits superior strength relaxation properties as compared to a first portion of each of the electrical contacts.

First, as noted in the outstanding Office Action, Chen does not disclose heating different first and second portions of a single contact by different first and second amounts. Moreover, Chen does not provide any suggestion or motivation to do so. The discussion in paragraphs 28 and 32 would not have motivated the person of ordinary skill to heat different portions of a single contact by different amounts in accordance with the claimed methods. Instead, Chen quite clearly teaches that it is desirable to evenly heat an entire microelectronic structure.

Attention is directed to paragraph 24, in which Chen states that it is preferable for the electromagnetic field to be generally uniform over the defined region through which the article 30 is moved. Paragraph 28 of Chen does not contradict this suggestion to use a uniform EM field. Paragraph 28 provides the following:

> At step 18, the article is maintained inside of the oscillating electromagnetic field until a defined heat -- treatment temperature is obtained in each of a selected plurality of microelectronic structures on the article. For some heat -- treatment applications, it is further desirable to achieve a defined time temperature profile in each of the separate microelectronic structures to be heated. To control the heat -- treatment temperature obtained, and/or the time -- temperature profile, one or more of at least four parameters may be controlled: (1) the configuration of the electromagnetic field; (2) the oscillation frequency; (3) the electrical power supplied to the field generator circuit; and (4) the ambient heat transfer environment. For a given configuration, each of the foregoing factors may be held relatively constant. Accordingly, once the equipment and environmental parameters are determined and stabilized, the temperature of the microelectronic structures may be measured at various times during the heating process. Any of the foregoing parameters may then be adjusted as appropriate to achieve the desired temperature control.

The foregoing discussion within Chen does not suggest to heat different portions of a single contact by different amounts. The foregoing discussion by Chen at all times refers to each microelectronic structure as a unitary structure. Chen does not discuss different portions of an individual microelectronic structure. At all times, Chen does not provide any reason or suggestion to unevenly heat a microelectronic structure. Nor does Chen describe how to unevenly heat a microelectronic structure. Chen's discussion of heat treatment and the related parameters at no time concerns or provides any reason to unevenly heat a single microelectronic structure.

A large portion of the discussion within Chen is directed to attempting to measure the temperature of the microelectronic structures. Chen describes infrared sensors, heat indicating paint, and the use of dots for the purpose of measuring the temperature of the microelectronic structure. At no time does Chen provide any suggestion that a temperature differential may exist within a microelectronic structure. Nor does Chen provide any suggestion to measure a temperature differential between different portions of a single microelectronic structure. Instead, Chen recognizes that the microelectronic structures are extremely small in size (see paragraph 29) and are difficult to directly measure temperature. Chen's discussion of measuring temperature is in the context of measuring the temperature of an entire microelectronic structure. In paragraph 32, Chen discusses the use of dots or regions deposited on the article. Chen provides the following:

> In the alternative, or in addition, very small dots or regions of any material that change state at a defined temperature may be deposited at selected locations on the substrate and/or the plurality of microelectronic structures, prior to placing the article to be heated in the oscillating electromagnetic field. An array of dots or regions may be deposited, wherein each dot or region will change state at a different defined temperature. The dots or regions may then be observed during or after the article is heated in the electromagnetic field, to determine the temperature across the article.

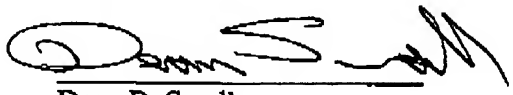
It should be recognized that the article 30 includes a substrate with a plurality of microelectronic structures 32 attached to the substrate. Therefore, when Chen describes depositing an array of dots across the article, Chen is concerned with measuring temperature changes across an entire substrate that includes a plurality of microelectronic structures. Chen

does not suggest using the array of dots to measure temperature differentials within a single microelectronic structure.

Also, attention is directed to paragraph 39 where Chen describes the article 30 to be placed in coils 42a, 42b of an electromagnetic field generating circuit 40. Chen states that the article 30 is positioned so that the microelectronic structures on any given surface of the article will be exposed to generally the same intensity of electromagnetic field. This is a further example that Chen's teachings would motivate the person of ordinary skill to evenly induction heat the microelectronic structures, and not to induction heat different first and second portions of each individual electrical contact by different first and second amounts. Therefore, it is respectfully submitted that Chen fails to render obvious the claimed invention.

In view of the forgoing comments it is respectfully submitted that the pending claims define allowable subject matter. Should anything remain in order to place the present application in condition for allowance, the examiner is kindly invited to contact the undersigned at the telephone number listed below.

Respectfully Submitted,



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